

SAN FRANCISCO PUBLIC UTILITIES COMMISSION  
**WATER RESOURCES DIVISION**  
**ANNUAL REPORT**  
Fiscal Year 2020-2021



San Francisco  
**Water Power Sewer**  
Services of the San Francisco Public Utilities Commission

## Dear Partners, Customers, and Stakeholders:

It may go without saying that the past two years have been some of our most challenging: we are nearing 24 months living amidst a global pandemic and marking two of California's driest years on record. Much of the state continues to be in extreme or exceptional drought. On November 23<sup>rd</sup>, 2021, our Commission declared a water shortage emergency, triggering a cascade of actions that will successfully guide us through this dry period.

The SFPUC has called on the 2.7 million people we serve throughout the Bay Area to help save our water. San Franciscans remain committed to water conservation as a way of life and use on average about 42 gallons per person per day, among the lowest usage in the state. But this doesn't mean that our work is done. We know that we can do more to reduce water waste and ensure that every drop counts.

We continue to provide a wide array of conservation assistance to San Franciscans. In addition to delivering our core conservation services, we are finding new, innovative ways to conserve water. This year, we will launch a new Hot Water Recirculating Pump Rebate Program for residential customers. Recirculating pumps deliver hot water to showers and faucets faster, potentially saving a single-family home thousands of gallons of water per year.



Services of the San Francisco Public Utilities Commission

(Continued on next page.)

Crystal Springs Reservoir

Innovation has been at the heart of the SFPUC since we started over 100 years ago. We are continuing in this tradition as we seek innovative solutions to address all of our water challenges, including water shortage.

### Atmospheric Water Generation

In a new partnership with the San Francisco Botanical Garden and Hummingbird Farm, we are testing the ability to produce water for irrigation using atmospheric water generation (AWG) to extract water from the air. Piloting this concept will also help us understand how this technology may be able to produce water that meets drinking water standards.

### Brewery Process Water

We are continually looking throughout our service area to identify where we can support water conservation. To this end, we are providing grant funds for San Francisco breweries to collect, treat, and reuse process water generated onsite. Because breweries use large quantities of water for cleaning tanks, bottles, and equipment, reusing brewery process water provides significant water savings.

### Diversifying Our Portfolio

By relying on multiple sources of water, we help protect our customers from potential disruptions in water supply due to emergencies or natural disasters. A diverse mix of water sources also increases our resiliency during times of drought. Our staff is working around the clock to ensure that we continue to provide high-quality, reliable water to our customers.

**WE ARE SO GRATEFUL TO OUR CUSTOMERS** for their commitment to water conservation and encourage everyone to continue focusing on conserving our most precious resource. So much has already been asked of us during this difficult year. But by working together to meet this call to action, we can come out of this drought stronger and more connected to this important resource than ever.

Thank you,



Paula Kehoe, Director of Water Resources

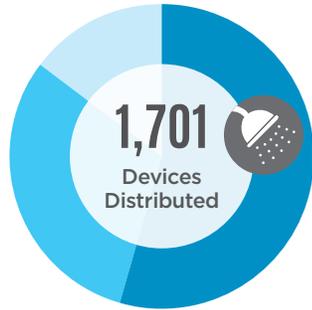


# Water Resources Division Accomplishments: FY 2020-2021

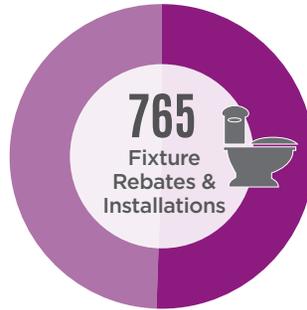
## Water Conservation



219 □ Non-Residential  
214 ■ Single-Family  
127 ■ Multi-Family  
2 ■ Landscape



927 ■ Aerators  
527 ■ Showerheads  
247 □ Spray nozzles, flappers,  
fill valves, etc.



387 □ Washers  
378 ■ Toilets

### OUTREACH & EDUCATION

**14,374** Leak Alert Notifications  
**1,282** Conservation Phone Calls  
**137** Water Waste Reports  
**92** Class Presentations  
& Field Trips

### LANDSCAPE PROGRAMS

**596** Rain Barrels  
**24** Trainings & Workshops  
**16** Cisterns  
**7** Graywater Kits

RESULTING  
IN

**284**  
MILLION  
GALLONS\*  
SAVED

\* Estimated lifetime active and passive water savings over a 30-year period

## Local Water Projects (Lifetime Program Totals)



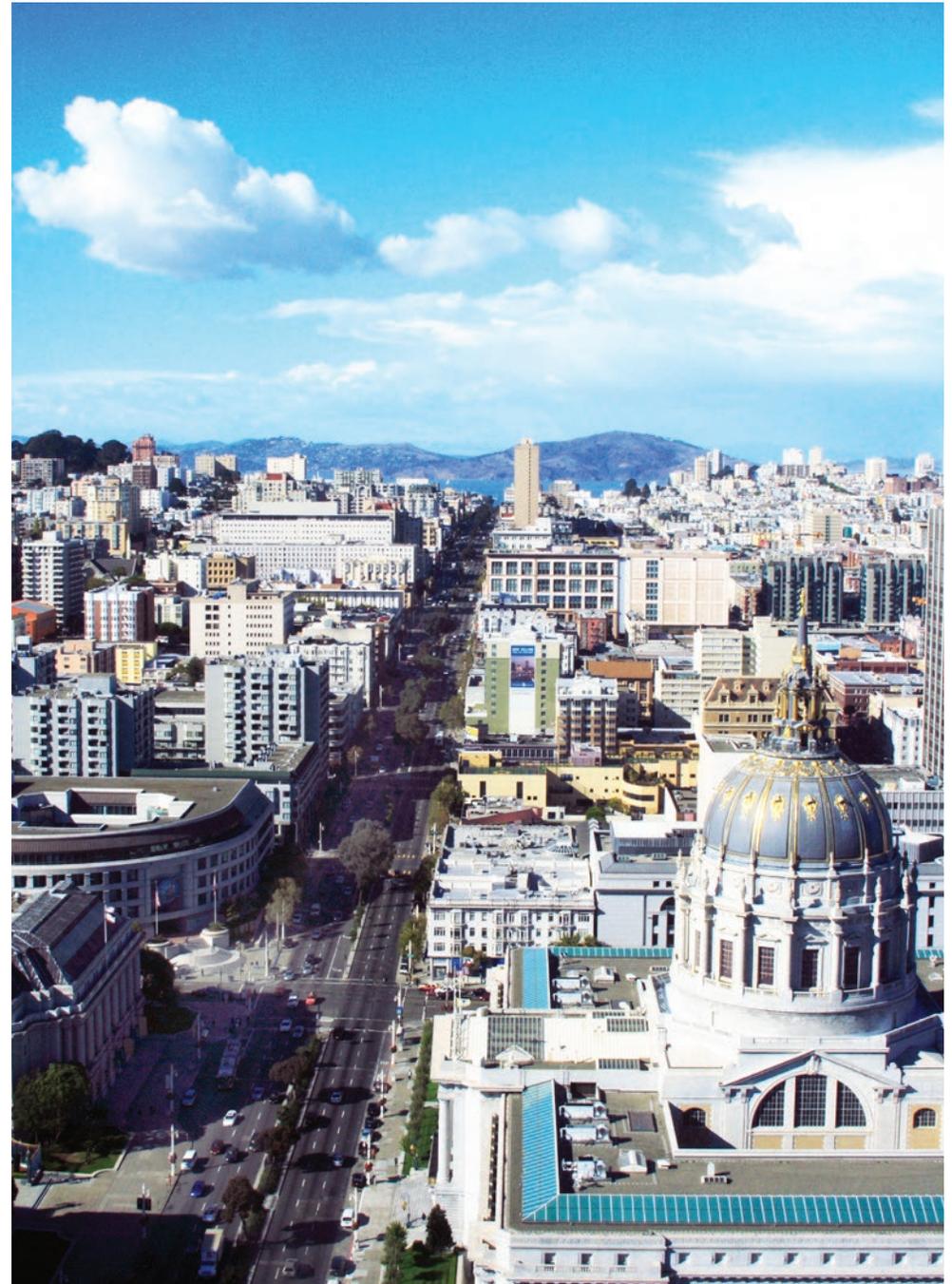
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# We Deliver

The SFPUC Regional Water System is a public asset that delivers high-quality drinking water to 2.7 million residents and businesses in the Bay Area. The system collects water from the Tuolumne River in the Sierra Nevada, from protected local watersheds in the East Bay and on the Peninsula, and groundwater stored in a deep aquifer located in San Francisco and San Mateo counties. The SFPUC delivers water to 26 wholesale customers in Alameda, Santa Clara, and San Mateo counties and provides direct retail water service to customers in San Francisco and some customers outside of San Francisco. The Bay Area Water Supply & Conservation Agency (BAWSCA) represents the wholesale customers and coordinates their water conservation, supply, and recycling activities.

San Franciscans water conservation efforts have helped reduce water demand over the last two decades despite population growth. In 1998, San Francisco had about 754,000 residents who used 82 million gallons every day. Today, with 875,000 residents, San Francisco uses 37.3 million gallons every day. In FY 2020-21, the average residential customer in San Francisco's retail service area used 42 gallons per day. While this water use is among the lowest in the state, the SFPUC remains committed to comprehensive water conservation efforts.



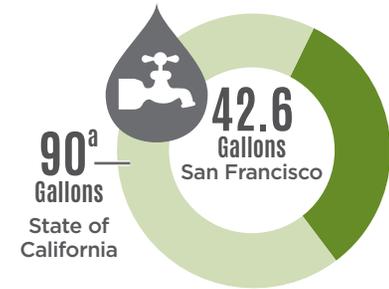
# FY 2020-2021 San Francisco Residential Water Use



**SAN FRANCISCO  
POPULATION**



**WATER USED BY SAN FRANCISCO  
RESIDENTIAL CUSTOMERS**

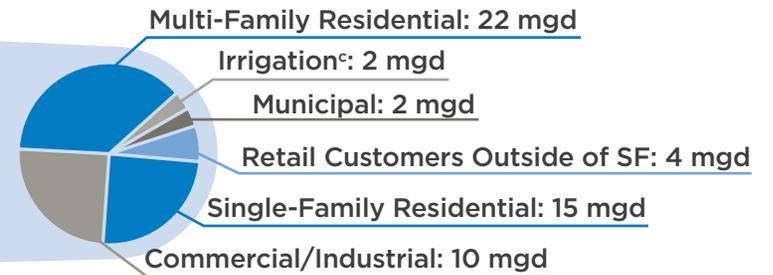


**RESIDENTIAL WATER USE  
PER PERSON, PER DAY**

## FY 2020-2021 Regional Water System Deliveries and Retail Water Use



**REGIONAL WATER  
SYSTEM DELIVERIES<sup>d</sup>**



**RETAIL WATER USE<sup>d</sup>**

- a From the State Water Resources Control Board average monthly residential R-GPCD for all hydrologic regions for 2021.
- b Deliveries exclude 5.3 mgd delivered to customers participating in the Regional Groundwater Storage and Recovery Project in lieu of groundwater pumping.
- c These data are from dedicated irrigation accounts only, and do not include irrigation use from water accounts that jointly serve both indoor and outdoor demands.
- d The Retail Water Use chart does not reflect water used for pipe flushing, firefighting, street cleaning, and loss from supply-side main and pipe breaks. The Regional Water System Deliveries chart does include water loss.

## OneWaterSF

In 2016, OneWaterSF was established as a new approach to how we do business at the SFPUC. With a Vision and a set of Guiding Principles, a multi-disciplinary Working Group tested this framework by advancing several initiatives with multiple benefits for our organization and our customers. Over the years, OneWaterSF has continued to grow organically, with more staff across the organization embracing this approach.

In 2020-2021, as we faced unprecedented challenges in our communities confronted with a global pandemic, social injustice, and changing climate patterns, the importance of an integrated resource management approach that can help ensure reliable, safe, and affordable utility services is more important than ever. Through OneWaterSF, we take a holistic view of our priorities and focus on adapting to changes with understanding and creativity.

For more information, visit [sfpuc.org/about-us/policies-plans/onewatersf](https://sfpuc.org/about-us/policies-plans/onewatersf).



# Local Water Program

The SFPUC's Local Water Program provides conservation assistance, promotes recycled water to meet the City's most significant irrigation needs, mandates non-potable supplies for toilet flushing and irrigation in new developments, and develops local groundwater to sustainably enhance the City's drinking water supply now and into the future.

## Onsite Water Reuse Program

In 2012, San Francisco established the Onsite Water Reuse for Commercial, Multi-Family and Mixed-Use Development Ordinance. Commonly known as the Non-potable Water Ordinance, it added Article 12C to the San Francisco Health Code, allowing for the collection, treatment, and use of alternate water sources for non-potable uses in buildings. In 2013, the Non-potable Water Ordinance was amended to allow for district-scale projects, where two or more parcels can share alternate water sources. In 2015, Article 12C became mandatory and now requires new development projects of 250,000 square feet or more of gross floor area to install and operate an onsite non-potable water system.

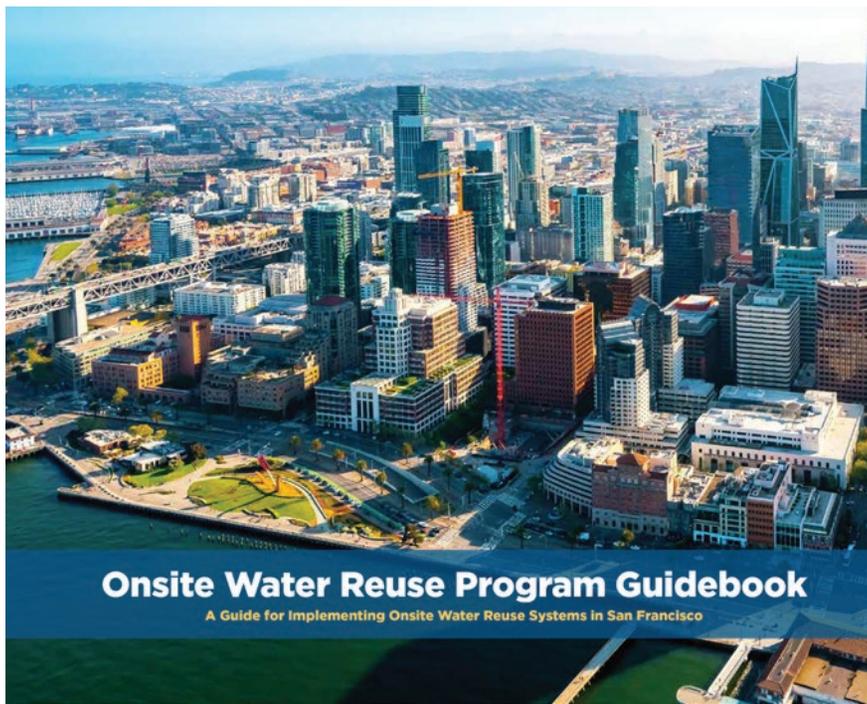
Over the past year, the SFPUC received 9 water budget applications to install onsite water systems. This brings the total number of water budget applications reviewed by the SFPUC to 116 projects. By 2040, it is expected that the total potable water offset for the Onsite Water Reuse Program will be approximately 1.3 mgd. Additionally, this past year, the SFPUC hosted a fall webinar series in partnership with the SF Department of Public Health to provide designers and developers with key updates and technical guidance on implementing an onsite water reuse system in San Francisco. The recorded webinars are available to stream at [sfpuc.org/construction-contracts/design-guidelines-standards/onsite-water-reuse](https://sfpuc.org/construction-contracts/design-guidelines-standards/onsite-water-reuse).



## Local Water Program (continued)

### Onsite Water Reuse Program (continued)

The SFPUC has also been on the forefront of innovation in advancing onsite water reuse in North America. As chair of the National Blue Ribbon Commission for Onsite Non-potable Water Systems, the SFPUC is leading a national collaborative of municipalities, water utilities, and public health agencies from 14 states, the District of Columbia, US EPA, and US Army Engineer Research and Development Center, the city of Vancouver, and the city of Toronto. The National Blue Ribbon Commission is focused on addressing key institutional and regulatory barriers to widespread adoption of onsite non-potable water systems. Efforts have included developing a risk-based water quality framework for onsite water reuse and establishing model policies for municipalities that support local implementation of onsite water reuse. Supported by the WaterReuse Association, the group initiated an effort to develop an operator certificate program for onsite non-potable water systems. The program's goal is to build operator capacity and provide the unique training to develop the skills needed to safely operate and maintain onsite systems. The operator certificate program is anticipated to be completed in 2022. For more information about the National Blue Ribbon Commission, visit [www.watereuse.org/nbrc](http://www.watereuse.org/nbrc).



SFPUC staff, Mayor London Breed, activist Edward Norton, and SFPUC Commissioner Newsha Ajami at the Anchor Brewing project celebration.

# Local Water Program (continued)

## LOCAL ONSITE WATER REUSE PROJECTS

Featured below are three development projects driving innovation by incorporating onsite water reuse systems.



Image courtesy of SOM.

### **SAN FRANCISCO PERMIT CENTER**

The City's new 16-story Permit Center is consolidating all the City's permitting agencies into one space. To comply with the Non-potable Water Ordinance, the project installed an onsite water reuse system which is recycling graywater and rainwater to supply toilet and urinal flushing in the building and landscape irrigation. This system helps avoid using high quality drinking water for non-drinking purposes, saving about 482,000 gallons of water each year.



Image courtesy of Related California.

### **FIFTEEN FIFTY**

First opened in September 2020, Fifteen Fifty is a high-rise residential building with 550 apartment units. To adhere to the Non-potable Water ordinance, the project included a graywater membrane bioreactor (MBR) system that captures, treats, and reuses graywater from the building. Rainwater is also collected from the building roof, prefiltered, and directed to a separate concrete collection tank. The treated graywater and rainwater are recycled for toilet flushing and irrigation and it is estimated that the project will offset about 2.5 million gallons of potable water annually.



Image courtesy of Mission Rock Partners.

### **MISSION ROCK**

Mission Rock will be a new mixed-used neighborhood spread over 28 acres, including parks, open space, residential, commercial, and retail. The project will install a district-scale blackwater treatment system to comply with the Non-potable Water Ordinance. Looking to maximize the potential to deliver a sustainable, low-carbon neighborhood, the project's district-scale blackwater system will supply the non-potable water needs of the site, which include toilet flushing, irrigation, and cooling tower makeup water. The project will offset about 11.8 million gallons of potable water per year, which is 17% of the project's overall water demands.

## Local Water Program (continued)

### Groundwater Management Program

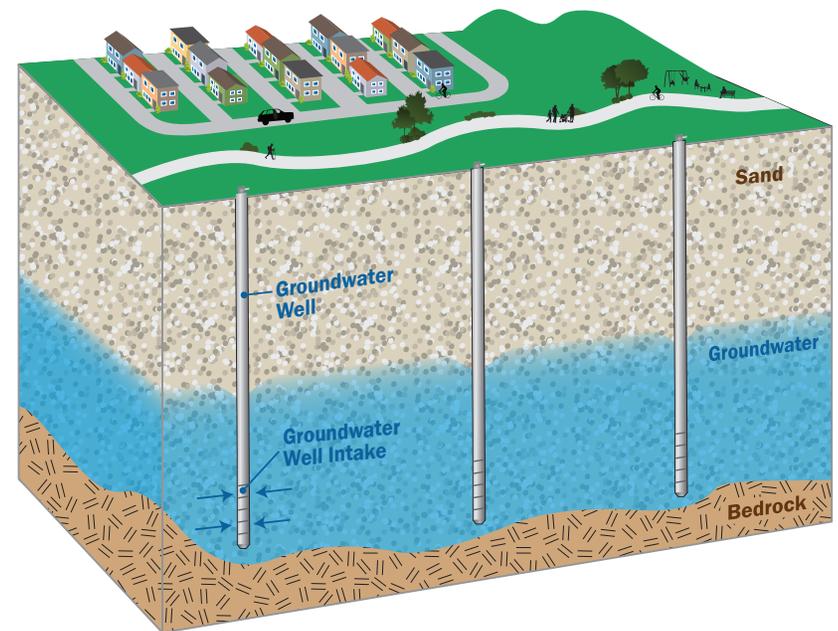
The SFPUC's groundwater supply comes from the 40-square-mile Westside Basin, an aquifer extending from Golden Gate Park in San Francisco southward through Millbrae. The depths of production wells installed by the SFPUC range from 270 to 750 feet below ground. The SFPUC benefits from the storage, reliable yield, and consistent quality of water provided by this local resource.

The groundwater basin is a vital local drinking water resource for San Francisco and neighboring communities in San Mateo County. To enable the responsible and sustainable management and protection of the Westside Basin, the SFPUC conducts groundwater level and quality monitoring as one of its top priorities. Our monitoring network has expanded to 101 wells since the first wells were installed in 1989. We collect data from these wells to assess how the groundwater basin responds to our operations. This allows us to adapt our groundwater pumping in response to changes in the aquifer so we can sustain this important resource.

Groundwater is an essential part of the state and national drinking water supply. Eighty percent of Californians depend on groundwater for all or part of their drinking water supply as they have for generations. Our Groundwater Program includes two projects: the San Francisco Groundwater Supply Project, and the Regional Groundwater Storage and Recovery Project

### SAN FRANCISCO GROUNDWATER SUPPLY PROJECT

The San Francisco Groundwater Supply Project allows us to supplement our drinking water sources by blending a small amount of groundwater with water from the Regional Water System. The SFPUC has begun ramping up production to blend an average of up to 1 mgd of groundwater to our water supply. Over the next several years, we will incrementally build up to an average of 4 mgd of groundwater production in San Francisco. For more information about groundwater, or to view our water quality reports, visit [sfpuc.org/programs/water-supply/groundwater](https://sfpuc.org/programs/water-supply/groundwater).



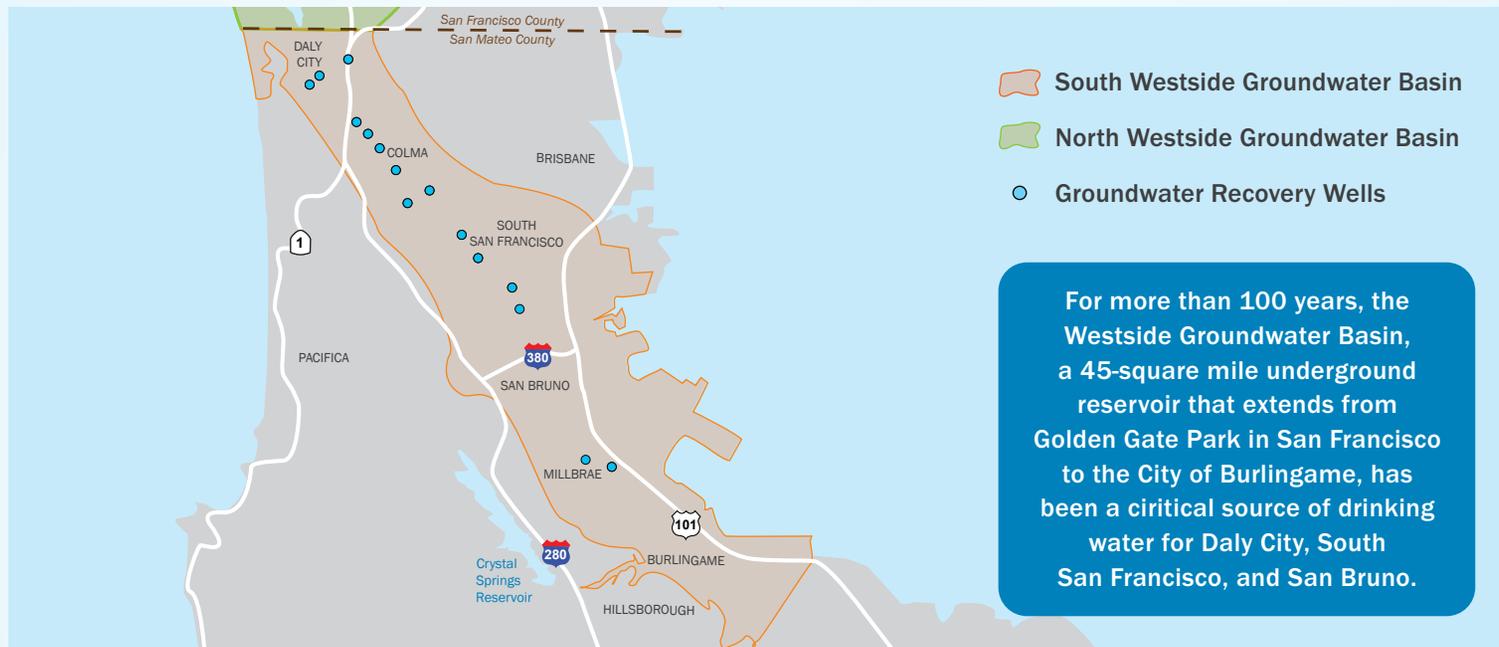
## Local Water Program (continued)

### Groundwater Management Program (continued)

#### REGIONAL GROUNDWATER STORAGE AND RECOVERY PROJECT

The Regional Groundwater Storage and Recovery Project is a partnership between the SFPUC, the California Water Service Company (serving South San Francisco and Colma), the City of Daly City, and the City of San Bruno. This project is a sustainable, conjunctive use project that has storage and recovery components. During years of normal or heavy rainfall, the SFPUC provides additional surface water from the Regional Water System to the partner agencies to reduce the amount of groundwater pumped from the South Westside Groundwater Basin.

Over time, the reduced groundwater pumping will result in increased storage of up to 20 billion gallons from recharge. The stored water will serve as an additional water supply during a drought. The project consists of up to 15 production wells, 12 of which were completed as of 2020. The project was in a storage phase from May 2016 through June 2021 during which the SFPUC accumulated nearly 10 billion gallons of groundwater storage (approximately 30,400 acre-feet).



## Local Water Program (continued)

### Recycled Water Program

Water is too precious a resource to use just once. Using recycled water for non-drinking purposes such as landscape irrigation, toilet flushing, street cleaning, and cooling helps preserve drinking water supplies from the Regional Water System, especially during the drought. We continued to work with our partners at Harding Park, Fleming, and Sharp Park Golf Courses so that we can provide recycled water for irrigation.

In San Francisco, construction continues at the Westside Enhanced Water Recycling Project with anticipated completion in early 2022. The project includes a new recycled water treatment facility, storage reservoirs, and pump stations to deliver recycled water. Construction has been completed on approximately 8 miles of recycled water pipelines. The irrigation retrofits are in progress for Golden Gate Park and Lincoln Park Golf Course and recycled water deliveries are expected in mid-2022. The SFPUC plans to save approximately 2 mgd of potable water with the Westside Enhanced Water Recycling Project. The water produced by this project will be used primarily to irrigate Golden Gate Park, Lincoln Park Golf Course, and the San Francisco Zoo. This project will receive loan and grant funds totaling \$186 million from the State Water Resources Control Board's Clean Water State Revolving Fund, which will save \$123 million for our ratepayers by reducing our debt finance costs. For more information about the Recycled Water Program, visit [sfpub.org/programs/water-supply/recycled-water](https://sfpub.org/programs/water-supply/recycled-water).



Westside Enhanced Water Recycling Project

## Local Water Program (continued)

### Resource Management at Lake Merced

Lake Merced is made up of four interconnected lakes and provides a vital link for wildlife, particularly for migrating birds. The lake also provides a regional recreational venue offering fishing, boating, bicycling, and wildlife viewing. In an emergency, Lake Merced water can also be used for firefighting or sanitation purposes if no other sources of water are available. The SFPUC aims to maintain water levels in the lake to support various recreational activities and provide a reliable emergency non-potable water supply. The SFPUC and the City of Daly City are working together to improve the Vista Grande stormwater system, which drains the northwestern portion of Daly City and an unincorporated portion of San Mateo County – areas originally within the watershed of Lake Merced. Project goals include improving stormwater drainage, minimizing flood risk, and providing a sustainable water source for Lake Merced. Daly City completed the project environmental review in 2018 and has finalized 100% design documents. They are working to acquire needed project funding, while completing required permitting. Bid and Award is anticipated to commence in fall 2022, with construction potentially commencing in spring/summer 2023.



Lake Merced

# Water Conservation Program

The SFPUC continues to provide a comprehensive water conservation program open to residents and businesses in San Francisco. During FY 2020-2021, Covid-19 restrictions limited our ability to perform in-person water-wise evaluations. The Water Conservation Program staff launched water-wise phone consultations and virtual evaluations, and continued to provide onsite outdoor landscape evaluations and free water-efficient plumbing deliveries to residents.

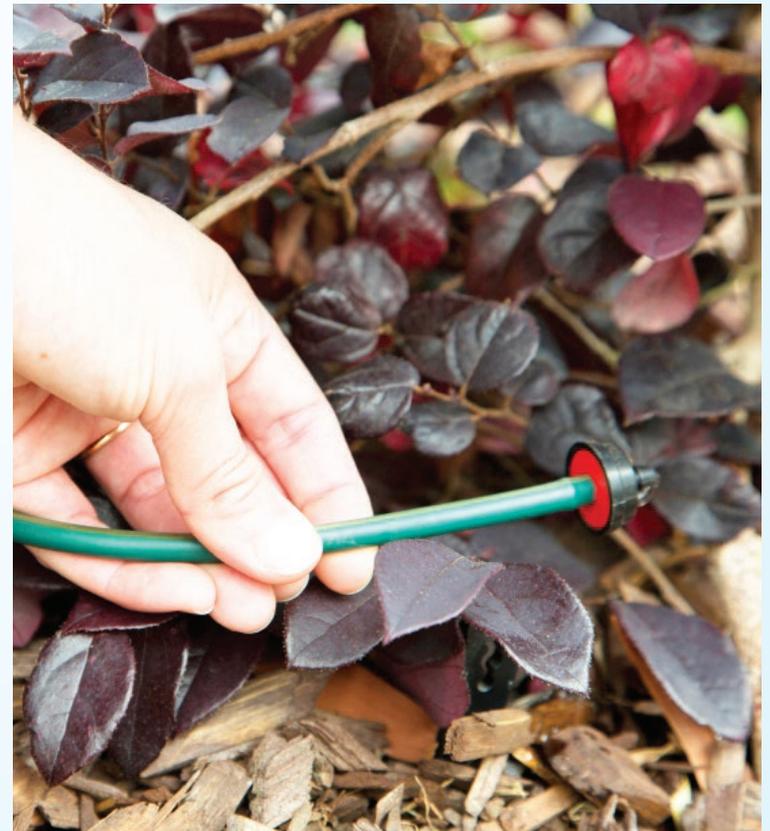
Replacing old, water-wasting plumbing fixtures with new efficient models is one of the most significant ways to reduce water use in homes, apartment buildings, and non-residential buildings. This helps stretch the SFPUC's water supplies. The SFPUC also supports planning and implementing conservation legislation as an effective way to institutionalize water conservation. For more information, visit [sfpub.org/savewater](https://sfpub.org/savewater).

## Virtual Water-Wise Evaluations

In FY 2020-2021, the SFPUC conducted 197 phone consultations for residential and commercial properties. These virtual evaluations helped customers identify leaks and maximize their water efficiency during the San Francisco shelter-in-place order. Outdoor evaluations continued and helped identify irrigation efficiency improvements and plant recommendations for customers looking to improve water efficiency and reduce irrigation runoff. Field inspection staff manually ran irrigation systems, observed operation, flagged areas needing repairs, reconnected loose drip irrigation fittings and showed customers their sprinkler timer programming features.

While indoor evaluations were paused, our virtual water-wise evaluations helped customers identify old plumbing fixtures that qualify for financial replacement incentives and provided free water-efficient plumbing devices, including showerheads, aerators, and toilet leak repair parts.

Close-up of irrigation drip system.



## Water Conservation Program (continued)

### Free High-Efficiency Plumbing Devices

In FY 2020-2021, the SFPUC provided 1,701 water-efficient showerheads, faucet aerators, garden spray hose nozzles, soil moisture meters, and toilet leak repair parts to help residential and commercial properties achieve immediate water savings. All retail customers are eligible to receive free plumbing devices after they complete a free phone consultation to determine their eligibility.

### Plumbing Fixture Replacement Program (PREP)

To help accelerate the replacement of old, water-wasting fixtures, the SFPUC continued the Plumbing Fixture Replacement Program (PREP), a toilet and urinal replacement program to help residences and businesses retrofit some of the last inefficient fixtures in our retail service area. During this fiscal year, 378 efficient toilets were installed through the PREP program, bringing the overall program total to 4,840 efficient toilets and urinals since the program launched in 2016.

### Water-Efficient Fixture Improvement Program (WeFix)

The SFPUC partnered with San Francisco Public Works to complete final replacements of inefficient toilets and urinals in City Department facilities that had applied to the WeFix program before 2017. Over 700 fixtures in 60 municipal buildings have been replaced since the program started in 2015.

### Clothes Washer Rebates

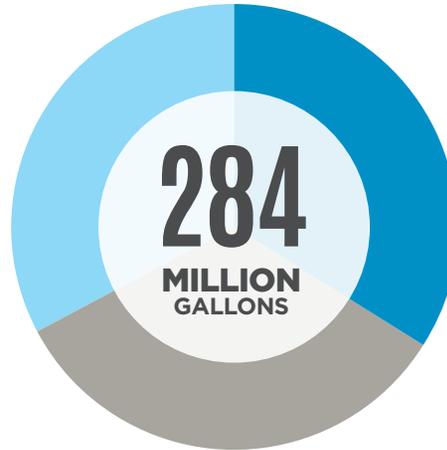
The SFPUC provided rebates of \$100 per washer for the purchase and installation of qualifying residential ENERGYSTAR efficient clothes washers in our retail service areas, and rebates of \$500 per washer to customers installing qualifying coin-operated, high-efficiency, commercial-style clothes washers. In FY 2020-2021, 387 rebates were processed.



# FY 2020-2021 San Francisco Retail Water Conservation Program Performance & Savings

## Water Conservation Savings Achieved by Sector

Millions of Gallons  
 97 ■ Single-Family  
 94 ■ Non-Residential  
 93 ■ Multi-Family



FY 2020-2021 water conservation program activities are estimated to have a potential 30-year lifetime water savings of 284 million gallons, roughly equal to 872 acre-feet of water. One acre-foot is equivalent to a football field covered by one foot of water.

## Water Conservation Program Activity since 2009

### INCENTIVES

- 188,413** Devices Distributed<sup>2</sup>
- 55,223** Showerheads
- 48,993** Toilets
- 28,843** Clothes Washers
- 1,855** Urinals
- 2,159** Rain Barrels, Cisterns, and Graywater Kits<sup>1</sup>
- 396** Landscape<sup>3</sup>
- 9** Commercial Equipment Grants<sup>4</sup>

### WATER-WISE EVALUATIONS

**47,376**  
**Evaluations Performed:**  
 in person and over the phone

### OUTREACH & EDUCATION

- 18,702** Conservation Info Line Calls<sup>5</sup>
- 17,050** Top User Letters<sup>1</sup>
- 2,761** Waste of Water Alerts<sup>1</sup>
- 1,262** Presentations & Field Trips

### WATER MANAGEMENT TOOLS

**89,301**  
**MyAccount REGISTRATIONS<sup>1</sup>**  
**93,647 LEAK ALERTS<sup>1</sup>**

- 1 Tracking of participation in measure started later than 2009
- 2 Aerators, toilet flappers, fill valves, pre-rinse spray valves, nozzles, soil moisture meters
- 3 Landscape includes Water Efficient Irrigation Ordinance projects, landscape audits, community irrigation grants and rebates
- 4 Includes ice machines, industrial dishwashers, sterilization equipment
- 5 Does not include calls to the SFPUC's Call Center regarding conservation



Installed rain barrel system.

## Water Conservation Program (continued)

### Rainwater Harvesting Program

Capturing rainwater at homes and businesses can reduce potable water used for irrigation and reduce flows to the SFPUC's combined sewer system during storm events.

The SFPUC continued its Rainwater Harvesting Program, providing discounts on the purchase of up to two rain barrels or one cistern per customer. The SFPUC will close the discount program and begin offering a Rain Barrel and Cistern Rebate program in FY 21-22. Eligible customers can receive a \$100 rebate for up to two rain barrels or a \$350 rebate for one cistern. The SFPUC's Rainwater Harvesting Program provided residents and businesses with 596 rain barrels and 16 cisterns this year.

### Laundry-To-Landscape Program

The SFPUC continued its Laundry-to-Landscape (L2L) Program, which offers residents a \$125 discount on the purchase of a graywater kit to direct water from the clothes washing machine into the garden for irrigation. This year, 7 discounted graywater kits were provided to residential customers. Program participants received virtual webinar trainings, access to a free installation tool kit, and virtual technical assistance to help design, install, and maintain their graywater systems.

The SFPUC is launching a new Laundry-to-Landscape program in FY 2021-22. Customers will be eligible to receive rebates on essential laundry-to-landscape components installed in a simple graywater system. To learn more, visit [sfpu.org/learning/conservesavewater/save-water-outdoors](https://sfpu.org/learning/conservesavewater/save-water-outdoors).

## Water Conservation Program (continued)

### Commercial Equipment Retrofit Rebate Program

The Commercial Equipment Retrofit Rebate Program provides funding to businesses to implement equipment efficiency upgrades. Through the program, businesses can receive rebates for: cooling tower pH controllers, medical equipment steam sterilizers, water efficient ice machines, commercial laundry retrofits, dry vacuum pumps, and connectionless food steamers. Alternatively, customers can apply for unique or site specific equipment retrofits that result in metered water savings over 150,000 gallons of annual water savings and meet program requirements.

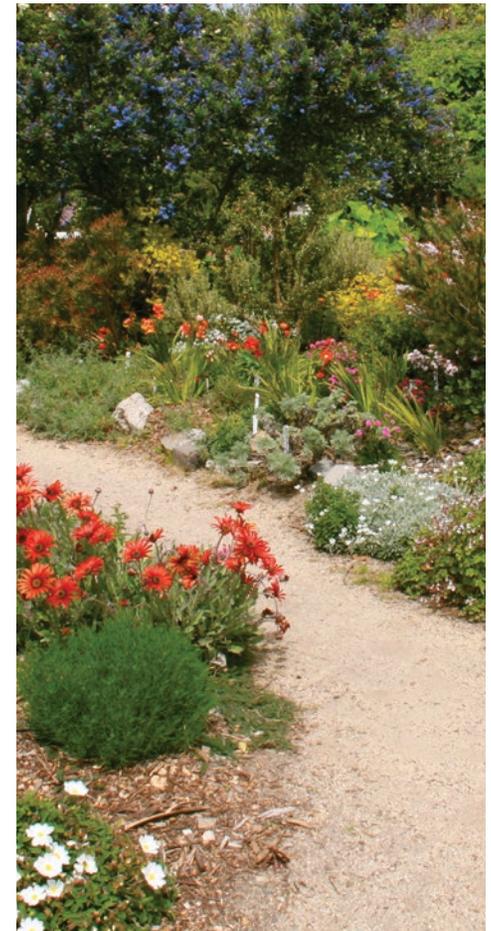
### Large Landscape Grant Program and Community Garden Grants

The Large Landscape Grant Program provides financial assistance to customers with large landscapes who implement irrigation and planting improvement projects that reduce potable water use. In FY 2020-2021, the SFPUC updated the program requirements, including lowering the eligible size threshold from half an acre to 10,000 square feet. To date, 12 completed projects have received funding through this program, representing about 63 acres of land.

The Community Garden Grant Program waives the cost of irrigation meters to help customers better monitor and efficiently manage water use. We continued to issue monthly informational water use reports to 9 sites that participated in our Community Garden Grant Program. The reports show how their actual water use aligns with estimated efficient water use - aka a “water budget” - for the size and use of their site.



Crocker Amazon Community Garden



Garden for the Environment

# Innovations Program

The Innovations Program promotes exploration of new ways in which we can conserve and reuse water, recover resources, and diversify our water supply. The Program facilitates testing of forward-thinking ideas, technologies, and research to help meet San Francisco's long-term potable and non-potable water needs. It is also an opportunity to develop partnerships with the community, industry, developers, technology vendors, and others to ensure long-term water resources sustainability in San Francisco. Through the Innovations Program, the SFPUC continues to explore several cutting-edge ideas, including the following projects.

## Atmospheric Water Generation

The SFPUC is exploring new ways to produce water by piloting an atmospheric water generation (AWG) project in San Francisco. AWG is in the process of extracting water from ambient air. The goals for the SFPUC's AWG project include testing the ability to produce water for irrigation purposes in a community garden setting, testing the ability to produce water that meets drinking water standards, engaging the community about water, and understanding the value of AWG for the SFPUC's future water supply portfolio. The SFPUC partnered with the SF Botanical Garden and Hummingbird Farm to install the AWG technology in Fall 2021.



Paula Kehoe and Taylor Nokhoudian pose near the AWG panel at SF Botanical Gardens.

## Wastewater Heat Recovery

The SFPUC offers grants through its Onsite Water Reuse Grant Program to encourage retail water users to reduce SFPUC water supply usage by collecting, treating, and reusing water onsite. The SFPUC modified its Onsite Water Reuse Grant Program to incorporate a wastewater heat recovery component. Wastewater heat recovery refers to the extraction of thermal energy from warm wastewater, or treated non-potable water, and subsequent beneficial use of this energy to offset existing energy requirements. Integrating wastewater heat recovery with onsite water reuse can offset some or all the energy needed for onsite wastewater treatment.

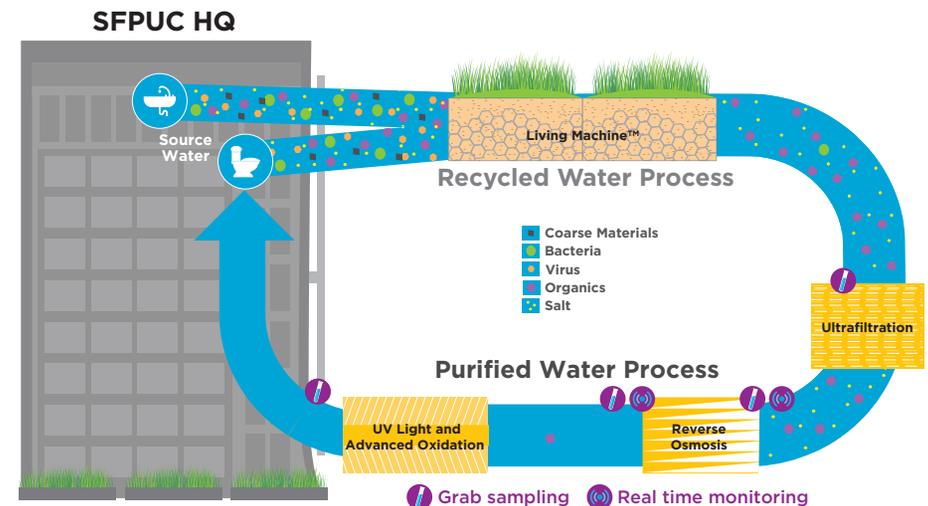
## Expanded Leak Detection

Through its City Distribution Division, the SFPUC has established a Water Loss Reduction Program to reduce water lost from pipe and main breaks in our infrastructure. Key aspects of the program include preparing annual water loss audits and developing a Water Loss Master Plan. That plan will analyze existing water loss reduction practices and provide guidance for ongoing and new practices to provide cost-effective water loss reduction over the next 15 years. SFPUC staff continued to provide input on the State Water Resources Control Board's efforts to develop volumetric water loss standards and other water loss performance measures. To date, the SFPUC has conducted pilot studies of the efficacy of several different supply-side leak detection technologies, including acoustic-based systems, satellite imagery, and continuous high-sample pressure monitoring with immediate pressure transient reporting.

## Purified Water Program

From 2018-2019, the SFPUC installed a temporary treatment system at the end of the existing onsite water recycling system at its 525 Golden Gate Avenue headquarters building. The purpose of the installation was to operate and test what a purified water system can produce and with what reliability. The treatment included ultrafiltration, reverse osmosis, and disinfection with ultraviolet light and advanced oxidation. This short-term research project, PureWaterSF, produced thousands of data points analyzed by third-party laboratories to look at a wide range of water quality parameters. The research concluded that advanced water treatment produces consistently high quality water comparable to drinking water standards, even at the building scale. PureWaterSF also

provided the SFPUC with the opportunity to engage operators, staff, and our local communities on purified water as part of a future water supply. While the temporary installation was dismantled in 2020, the research marked the beginning of the SFPUC's investigation of purified water as a local water supply solution in San Francisco. In 2021, the SFPUC initiated a study to consider the opportunities and challenges for purified water in San Francisco. That study will be completed in 2022. The SFPUC is committed to learning, exploring, and engaging on the prospects for purified water in San Francisco and throughout our service area.



# Alternative Water Supply Program

The Regional Water System has served the San Francisco Bay Area for almost 100 years and will continue to be the cornerstone of our water supply for San Francisco as well as our suburban retail and wholesale customers in the region. But issues such as climate variability, droughts, earthquakes, regulatory changes, and population growth require that we consider new water supplies and creative solutions to plan for our future needs. These new water supply options such as expanding storage, groundwater banking, transfers, purified water, and desalination are being evaluated as part of a new Alternative Water Supply Program that was established under the Water Resources Division this year. Most alternative water supplies being considered by the SFPUC involve two or more regional partners.

## Bay Area Regional Reliability Partnership

The SFPUC is part of the Bay Area Regional Reliability (BARR) Partnership which is looking for ways to collaborate to secure regional reliability especially during droughts. Through BARR, the SFPUC is working with Alameda County Water District, Bay Area Water Supply and Conservation Agency, Contra Costa Water District, East Bay Municipal Utility District, Marin Municipal Water District, Valley Water, and Zone 7 Water Agency to identify and develop opportunities for collaboration to improve water supply reliability throughout the region. With grant support from the U.S. Bureau of Reclamation, the SFPUC is engaged in a pilot study to evaluate opportunities to share and convey water supplies among partners.

## Daly City Recycled Water Expansion Project

Daly City operates a recycled water treatment facility which serves several irrigation users. The SFPUC is working with Daly City and California Water Service (Cal Water) to assess the feasibility of building a new facility that would provide an additional 1.25 mgd of average annual treatment capacity to serve cemeteries and other irrigation areas. New pipelines, pump stations, and offsite storage would be constructed to complete the recycled water distribution system and deliver water to new customers for irrigation purposes. The purpose of the project is to reduce irrigation reliance on the groundwater basin; provide local, sustainable, and drought resistant water supply; and preserve available groundwater supplies for drinking water. The SFPUC is currently completing an alternatives analysis for the project.



Recycled water sign at Westlake Park in Daly City.

## Alternative Water Supply Program (continued)

### Purified Water Opportunities

The SFPUC is currently evaluating two opportunities to develop new purified water supplies to augment surface water supply for the Regional Water System: the Crystal Springs Purified Water Project concept, and a second project with Alameda County Water District and Union Sanitary District. Feasibility studies are currently underway that will demonstrate how much new water supply can be made available, the timing of such availability, and how this new supply might interact with existing supplies.



Crystal Springs Reservoir

### Storage Expansion

The Calaveras Reservoir Expansion Project and the Los Vaqueros Reservoir Expansion Project would provide new storage opportunities. In both cases, greater storage capacity can provide flexibility for water supply during droughts. Water supply for storage and conveyance of the water to our customers remain the key components of the current evaluation.



Calaveras Reservoir

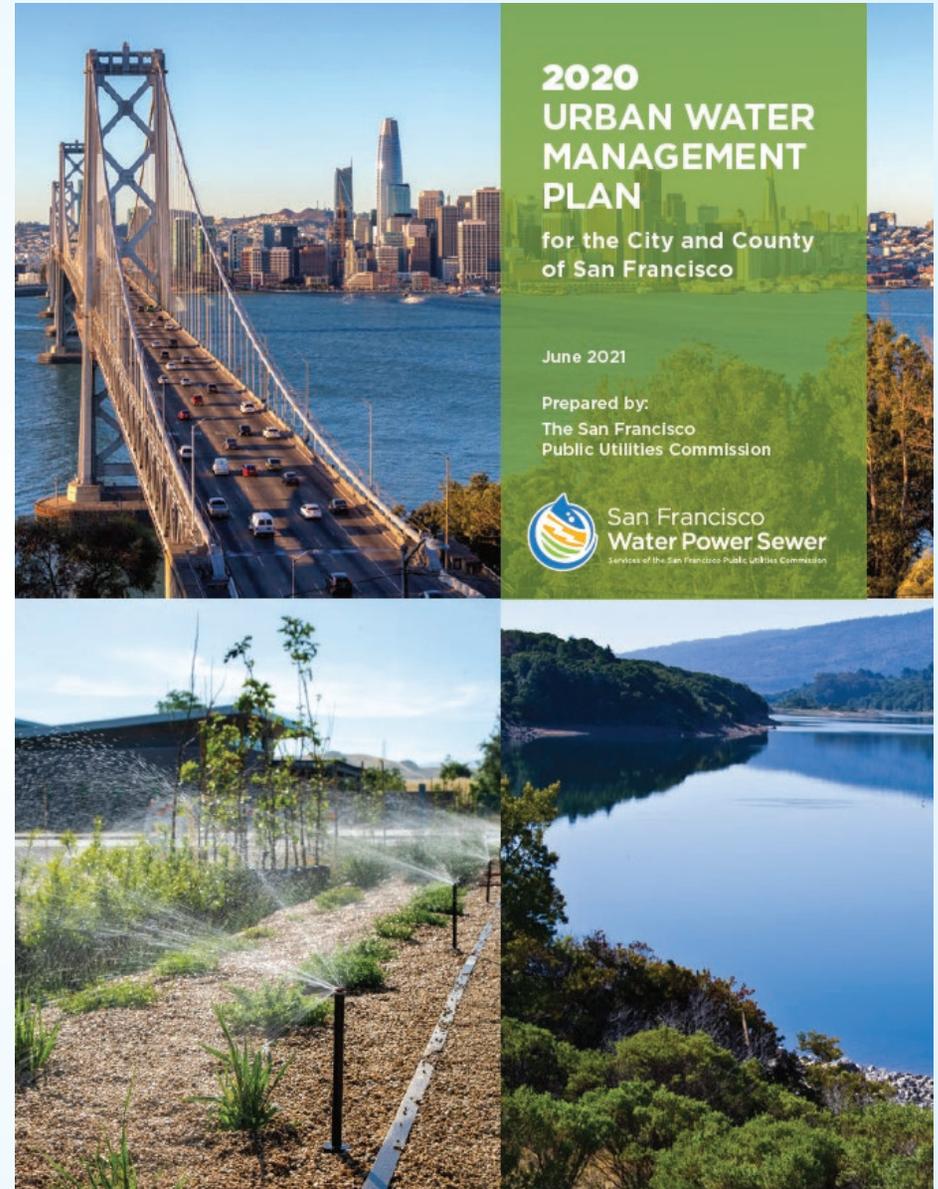
# Water Supply Planning

## New Water Efficiency Requirements

In FY 2020-2021, the SFPUC continued to prepare for new state urban water use requirements. The requirements are setting new water use targets for urban water providers, which go beyond the state's goal of 20% reduction in per capita urban water use by 2020 per Senate Bill X7-7 (2009) and will include volumetric water efficiency standards for indoor residential water use, outdoor landscape water use, and supply-side utility water loss, as well as performance measures for commercial, industrial, and municipal customer water use.

## 2020 Urban Water Management Plan (UWMP)

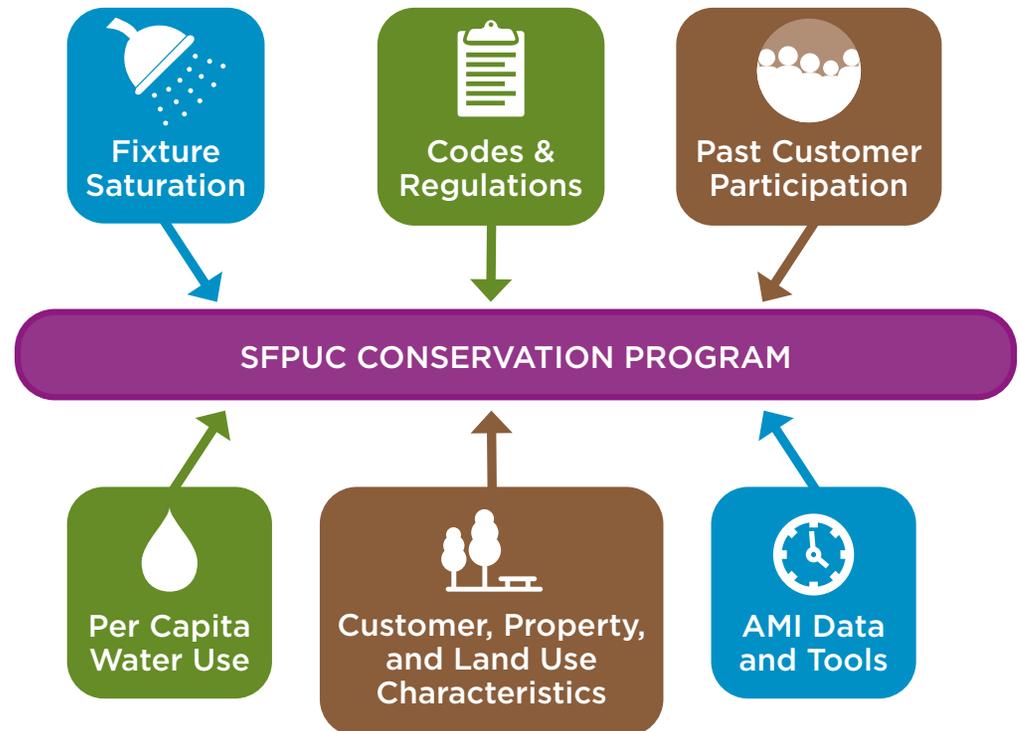
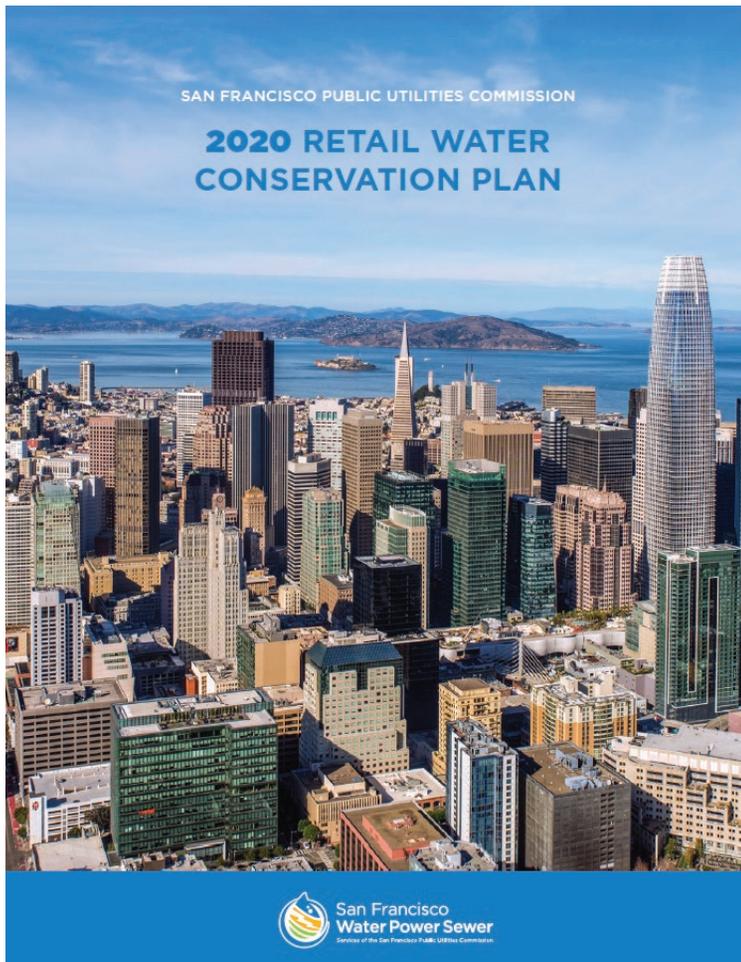
The SFPUC completed its 2020 UWMP, a detailed assessment of our efforts to ensure long-term water reliability and efficient use of supplies that urban water providers are required to provide the California Department of Water Resources every five years. The UWMP provides information on our retail and wholesale water systems, our current and future water supplies and customer demands, our compliance with state water conservation requirements, and our procedures for handling potential water shortages during drought. The SFPUC also updated its retail demand forecast model to support the 2020 UWMP. The results of the updated forecast model and the 2020 UWMP were shared with the Commission and stakeholders, and provided to the state. To view the document, visit [sfpuc.org/uwmp](https://sfpuc.org/uwmp).



# Water Supply Planning (continued)

## 2020 Retail Water Conservation Plan

The SFPUC's 2020 Water Conservation Plan is a voluntary report that we prepare every five years which describes our retail water conservation program, including what measures we undertake and why; estimated water savings; how these savings effect customer demand; and where we anticipate continued and future water savings. The 2020 Conservation Plan was shared with the Commission and stakeholders, and is available for review at [sfpuc.org/documents/2020-retail-water-conservation-plan-draft](https://sfpuc.org/documents/2020-retail-water-conservation-plan-draft).



# Community Outreach & Education

The SFPUC values the long-standing partnerships that we have established over decades with the diverse communities we serve. We have strived to engage our stakeholders and share important agency updates in a transparent and timely fashion. We have used both traditional and innovative outreach channels, whether they be print newsletters, social posts, public hearings, community events, or educational campaigns.

This year, due to the global pandemic, we had to reimagine some of our in-person engagement activities. Large scale events like the Water Conservation Showcase pivoted to online webinars, and in person tours became virtual. Innovative technology tools such as My Account or automated leak alerts became even more important in making sure our customers had information they could use, even when we weren't able to be together in person.



We partner with Hummingbird Farm at Crocker Amazon Park which offers affordable, fresh produce to our local community.



Volunteers at Garden for the Environment assist with composting.

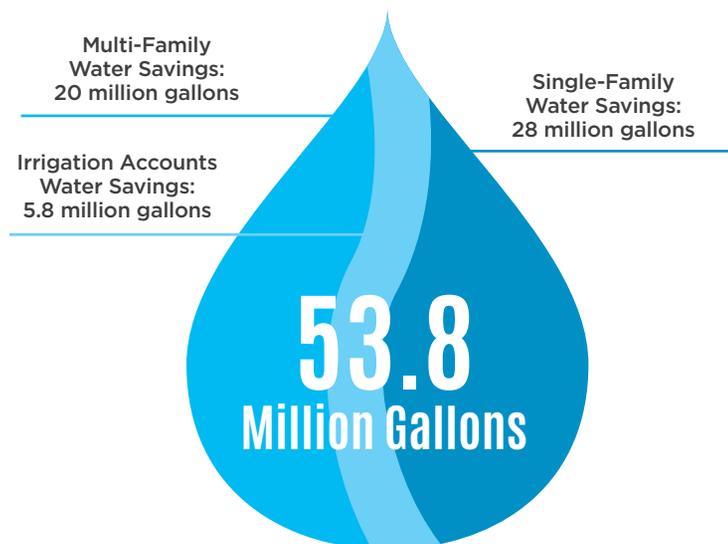
# Community Outreach & Education (continued)

## Leak Alert Program

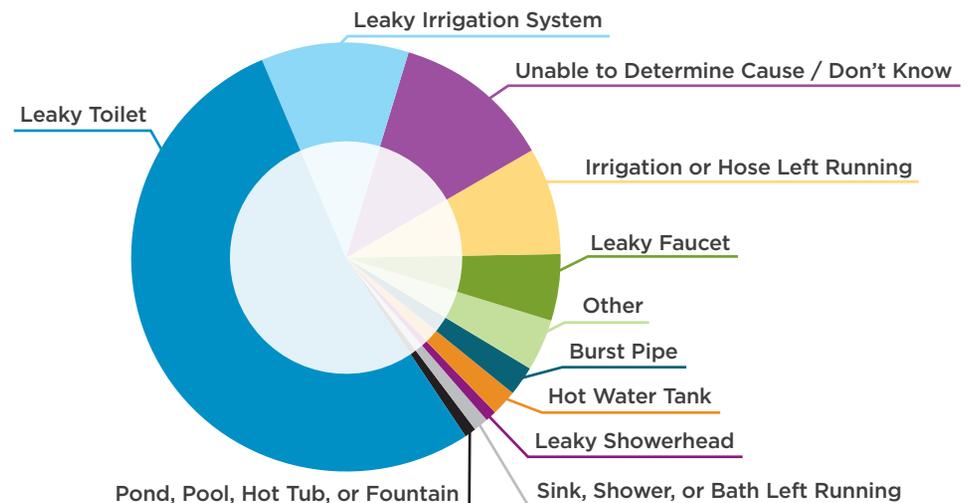
The Leak Alert Program continued to help customers fix leaks promptly by notifying them of continuous water consumption at their property. Utilizing SFPUC's automated meter infrastructure, the program sends alerts to single-family, small multi-family, and irrigation customers with three days of constant use by phone, text message, email, letter, and door hangers. The program was expanded during the current fiscal year to include alerts to commercial and large multi-family accounts. In FY 2020-2021, over 14,000 leak alert notifications were issued.

This year, the SFPUC completed a water savings analysis of alerts sent to irrigation account customers. This analysis reviewed irrigation account water use trends from 2014-2020 and the effect of the leak alert notifications. This analysis demonstrated a water savings of 5.8 million gallons per year associated with irrigation accounts in addition to the 47 million gallons saved per year through single-family and small multi-family, bringing the program water savings to 53.8 million gallons per year.

**Estimated Leak Alert Program Water Savings in FY 2020-2021**



**Cause of Leaks Reported by Customers in FY 2020-2021**



## Community Outreach & Education (continued)

### My Account Customer Portal

The SFPUC's My Account web portal allows customers to easily pay and view their water bills online and to see their hourly, daily, weekly, and monthly water use, which can help identify water use patterns and unusual spikes in water use. Since its launch in 2014, registration for My Account has steadily increased to over 89,301 users. Residential My Account users can also track how their water use aligns with a conservation target of daily use under 50 gallons per person per day. Account holders can register at [myaccount.sfwater.org](http://myaccount.sfwater.org).

### Water Conservation in Schools

The SFPUC is committed to fostering the next generation of environmental stewards by providing the communities we serve with educational resources. In FY 2020-2021, we expanded our free teacher resources to include virtual field trips and presentations designed to teach students how they can help protect our natural resources and prevent pollution. In total, there were 48 virtual classroom presentations and 44 virtual field trips to water-wise demonstration gardens.



My Account customer portal

## Looking Ahead

The SFPUC is committed to maintaining a reliable water supply today and into the future. In keeping with the SFPUC's history of innovation, our staff has continued to reimagine the possibilities of our future water supply, while working hard to maintain the quality and reliability we have come to depend on. We are able to bring new energy and imagination to address the most critical and complex challenges we face. The future calls on us to continue inspiring each other to share bold ideas, pursue creative solutions, and seek synergies that add value to our work in new ways.

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[sfpuc.org/programs/water-supply](https://sfpuc.org/programs/water-supply)

[sfpuc.org/savewater](https://sfpuc.org/savewater)

November 2021



San Francisco  
**Water Power Sewer**  
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